REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion and present amendment, is respectfully requested.

Claims 10-13 and 18 are pending in the present application, Claims 10-13 having been amended, Claim 18 having been added, and Claims 9 and 17 having been canceled without prejudice or disclaimer. Support for new Claim 18 is believed to be self-evident from the originally filed specification.[1]

In the outstanding Office Action, Claims 9-12 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Goesele et al. (US 6,150,239, hereinafter "Goesele") in view of Usenko (US 6,995,075). Claim 13 was rejected under 35 U.S.C. § 103(a) in view of Goesele and in view of Usenko and further in view of Maleville et al. (US 6,403,450, hereinafter "Maleville").

Applicants respectfully submit that new Claim 18 patentably distinguishes over Goesele, Usenko, and Maleville, when taken in proper combination.

Initially, it is noted that the Advisory Action mailed October 28, 2009 states that there is no proof of unexpected results. The examples and discussion in the present specification (as discussed in the response filed Oct. 5, 2009) are evidence.[2] It is improper for the Office to summarily dismiss the unexpected results discussed in the present specification. It is an "error not to consider the evidence presented in the specification."[3]

Goesele describes a method for the transfer of thin layers of monocrytalline material onto a target substrate. The aim of Goesele is to transfer a thin layer (in silicon carbide, silicon, germanium, and alloys essentially of silicon and germanium with carbon, as well as other materials) with a method involving temperatures lower than those possible using

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[1] See, for example, page 6 of the specification, page 7, lines 24-27 of the specification, page 8, lines 11-27 of the specification, page 12, lines 12-14 of the specification, and page 13, lines 7-11 of the specification.
[2] See MPEP §2145, which states "Rebuttal evidence and arguments can be presented in the specification."
[3] MPEP §2145, citing *In re Soni*, 34 USPQ2d at 1687.

conventional methods.[4] Goesele takes no interest in the electrical properties of the transferred thin layer. The aim of Goesele is just to transfer the thin layer of monocrystalline material. The question of the electrical properties is never mentioned or addressed in Goesele. When considering the electronic conductivity of the SiC layers obtained by the method of Goesele, the conclusion is that these layers cannot be used in the electronic field as explained in the present specification. Such layers completely lose their electrical conductive properties.[5]

Goesele does not recognize that implantation defect concentration in SiC affects the electrical properties of the SiC. In the invention defined by Claim 18, the quantity of implantation defects in the first 500 nm of the implanted think layer of SiC is considered, and this parameter is not at all considered by Goesele.

As explained in the response filed October 5, 2009, the implantation defect concentration is critical in that it affects the electrical properties of the SiC thin film (i.e., less than 500 nm in thickness).[6] It is the present inventors that have determined that the profile of electrical compensator defects is proportional to the profile of the implantation defects.[7]

Thus, Goesele does not disclose or suggest the claimed "wherein an implantation defect concentration in a first 500 nm of implanted SiC is lower than 9.10^{20} atoms/cm^3, and a number of acceptor defects compatible with desired electrical properties of an active thin layer is obtained." Moreover, the method of Goesele does not describe the claimed "thinning a layer of the SiC remaining fastened to the target substrate to a thickness lower than 500 nm."

Usenko does not cure the above-noted deficiencies in Goesele. Usenko describes a process for forming a fragile layer inside of a single crystalline layer. This fragile layer is a

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[4] See, Goesele, col. 3, line 63 to col. 4, line 6.
[5] See, present specification, from page 2, line 16 to page 3, line 14 and page 4, lines 12-29
[6] See, Specification, page 7, lines 24-27.
[7] See, Specification, page 7, line 28 to page 8, line 10.

porous silicon layer and not a layer of microcracks. After the transfer of the thin layer, the thin layer is thinned from its free face to eliminate the porous silicon remaining.

Usenko describes a method wherein the silicon thin layer is obtained by epitaxial growth on a porous surface. The epitaxial part that is near the porous layer is of bad quality because it contains pores, and it must be eliminated.[8] This part (i.e., the part with the pores) is eliminated from the thin layer through thinning.

Thus, from Usenko, a person of ordinary skill in the art only knows to remove the epitaxial part with pores from the thin layer. However, this feature from Usenko is not applicable to Goesele since there is no epitaxial part with pores to remove. A person of ordinary skill in the art, if presented with the description from Usenko, would not know what portion of any substrate in Goesele to remove by thinning since Goesele does not include any epitaxial parts with pores.

Even if a person of ordinary skill in the art, applying the method disclosed by Goesele, especially for fabricating an SiC thin layer, had noticed the bad electric quality of the transferred thin layer, he would not have thought to thin the transferred thin layer in order to obtain a layer of electronic quality. Based on Usenko, the person of ordinary skill would only think to apply thinning to remove the epitaxial part with pores from the thin layer.

In view of the above-noted deficiencies, Applicants respectfully submit that a person of ordinary skill in the art could not properly combine Goesele and Usenko to arrive at the claimed:

> determining hydrogen ion implantation conditions including dose, energy and implantation current that create a buried, embrittled film at a depth, with respect to an implanted face of the initial SiC substrate, wherein an implantation defect concentration in a first 500 nm of implanted SiC is lower than 9.10^{20} atoms/cm^3, and a number of acceptor defects compatible with desired

[8] See, Usenko, col. 2, lines 30-49.

electrical properties of an active thin layer is obtained...
[and]

thinning a layer of the SiC remaining fastened to the target substrate to a thickness lower than 500 nm.

Thus, Applicants respectfully submit that Claim 18 (and any claims dependent thereon) patentably distinguish over Goesele and Usenko, taken alone or in proper combination.

Addressing each of the further rejections, each of the further rejections is also traversed by the present response as no teachings in any of the further cited references to Maleville can overcome the above-noted deficiencies of Goesele and Usenko. Accordingly, it is respectfully requested that those rejections be withdrawn for similar reasons as discussed above.

Consequently, in light of the above discussion and present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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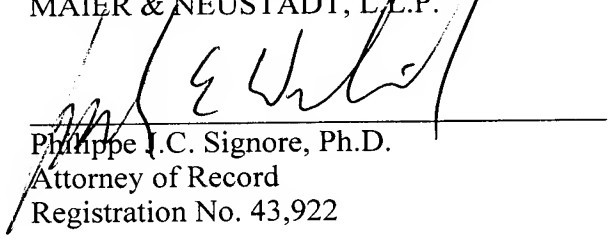

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